Testimony of John S. Morawetz
International Chemical Workers Union Council,
United Food and Commercial Workers International Union

Before the
House Committee on Homeland Security,
Subcommittee on Transportation Security
and Infrastructure Protection

Regarding
"The Goodyear Explosion: Ensuring Our Nation is Secure by Developing a Risk Management Framework for Homeland Security"

June 25, 2008

Thank you Chairwoman Jackson-Lee, Ranking Member Lungren, and Members of the Subcommittee for holding this important hearing and for the opportunity to testify. I am here today representing the International Chemical Workers Union Council (ICWUC) of the United Food and Commercial Workers Union (UFCW). The ICWUC, which was founded in 1944, represents more than 20,000 chemical workers in 32 states. In 1996, we merged with the UFCW and this mutually beneficial partnership continues to serve our members well.

I would like to take a moment to offer my sincere condolences to Mr. McInnis and his family on the loss of his wife in the Goodyear explosion. While we do not represent the workers at the Goodyear plant in Houston, where the explosion occurred on June 11th, we have been active for many years in a variety of health and safety issues which relate to workers in facilities where chemicals are used, especially those with extremely hazardous materials. The ICWUC has supported strong and effective

standards and laws to protect both our members and the public.

Unions have a proud history of fighting for the right to a safe workplace and for the basic right for workers to return home after a day on the job as healthy as when they left. From workers who are concerned about their safety and health, to union negotiators seeking health and safety contract language, to unions investigating health hazards or testifying in support of legislation, we are actively involved in making our workplaces safer. It is therefore an honor for me to appear before you to address the safety and health of our members who work in chemical plants.

As to my background, in the early 1980s, I investigated occupational health hazards for the National Institute for Occupational Safety and Health. In the mid 1980s, as the Director of Health and Safety for the Molders Union, I investigated a number of traumatic injuries and deaths and worked to get new standards on the well-documented hazards of confined spaces and failure to lock out equipment. In 1988, I was hired by the Chemical Workers Union as the Director of their Training Center in Cincinnati, Ohio and in 2005, I was asked to also serve as the Director of Health and Safety for the union. I am testifying today in that capacity.

UFCW chemical workers work in many different manufacturing industries including petroleum and coal products, fertilizers, pharmaceuticals, pesticides and other agricultural chemicals in smelters and refineries as well as natural gas distribution and power plants. Our members work with extremely hazardous substances and have a real interest in their facilities safe operation for their own health for their coworkers' health and for their communities' well-being.

The manufacturing of chemical substances involves the handling of highly hazardous materials. The dangers of that work are well known to all workers involved. In a strange irony, the site of one of ICWUC's most tragic loss of lives was a Thiokol facility near Woodbine, Georgia, in 1971. This company started the original manufacturing of synthetic rubber like in the Goodyear plant. The Woodbine plant

manufactured magnesium trip flares for the U.S. Army during the Vietnam War.

On February 3, 1971, the Thiokol facility was evacuated after several small fires broke out inside the plant. These fires caused the flares to ignite and the plant was destroyed. Horribly, the evacuation distance was not sufficient and 27 workers were killed when the plant blew up.

This accident served as a valuable tool in learning what must be done to protect workers -- just as the recent Goodyear explosion hopefully will. We can and must learn from any event, large or small, or from near misses. The Thiokol explosion led to a better understanding of the full danger of the materials in that plant and what a safe evacuation distance should be. Clearly, Goodyear management must also look into what needs to be corrected including better trainings and drills for proper evacuation. In addition, given the long delay of knowing what was happening with the workers inside the plant, Goodyear management must improve its methods for accounting for its entire workforce. We have expressed time and time again how important it is to mandate annual training for workers as well as other crucial changes needed to improve workers' safety.

It is far too early to know what the full facts are from the Goodyear explosion -- what the key failures were that lead to the explosion and most importantly what the root cause of the explosion was. But after a full analysis, there will likely be a root cause and that is where we can learn our most important lessons. From what little we know, the explosion took place in a reactor vessel, which was cooled by ammonia, a very dangerous substance by itself. In addition, the reactor handles a number of very hazardous and explosive chemicals. The dangers of these chemicals are also very significant and well known. After the explosion, a number of workers were hospitalized due to exposure to ammonia.

In this synthetic rubber operation, as in others, the pressure vessels such as reactors, storage tanks and process vessels are protected from excess pressures by

pressure relief systems. These systems consist of one or more relief valves that are pre-set to a certain level if an over-pressure situation occurs the valve will relieve the pressure until it again drops to the regulated amount. The problem with the relief systems at many facilities is that they relieve directly into the atmosphere. In the 1970s and 1980s, many states passed legislation that required the relief systems to relieve into an internal closed system. This system can be a recovery system, flare stack or some other way of not having the explosive or flammable vapors relieve to the atmosphere. Most of the legislation provided that the companies were not required to install the closed systems if it was not feasible. Companies could be exempted if they thought changing the system would be too expensive.

I am very familiar with this type of failure. On July 19, 1990, a BASF facility in Cincinnati, where I live and a facility that my neighbor retired from, exploded. Two workers died, 17 others were seriously injured and there was extensive damage to houses in the neighborhood. I still remember driving down Dana Avenue and seeing the cracked foundations of people's houses. The analysis of that explosion pointed to a reactor vessel that over pressurized and blew a relief valve. These valves were designed historically to vent steam to the atmosphere, a significant heat hazard but not explosive. The releases we are talking about today however are very explosive substances. In Cincinnati, the fumes spread around the vessel, found an ignition source and exploded. Luckily, the hazard of the over pressurized vessel was recognized, people were evacuated and a much worse disaster was averted. But again, there are lessons to learn from this explosion.

Many, if not the majority, of these chemical facilities never installed the closed systems. The danger associated with this technology is that if there is a terrorist event that results in a fire and subsequent evacuation, reactions will go wild. When reactors build excessive pressure, their relief systems will vent to the atmosphere. Since many of these chemicals are heavier than air, they will drift to the ground and find an ignition source. As a result, more explosions will take place.

Prior to the Goodyear plant opening in Houston, there was another Goodyear

facility in Akron, Ohio that produced the same product. One of the main reasons for moving the production was the Houston plant had much larger reactors that could produce larger quantities of the product. Yet, the Akron facility, unlike the Houston facility, had relief systems that vented to a closed system such as a flare stack or recovery system. It is reported that the Texas facility's largest tank could release up to 18,500 pounds of ammonia in a single event endangering 35,000 people at a distance of up to 1.7 miles. The largest single event of 1,3-Butadiene, a powerful carcinogen and reproductive hazard, could release up to 1.1 million pounds endangering 4,300 people. There is also a chronic risk to the community with releases of these chemicals.

Clearly, this type of release that can affect thousands of people calls for safer technologies in these plants including chemical substitution and safer process systems. While the Houston plant has relief systems, it is likely to be an atmospheric relief system. Closed relief systems can mitigate an accidental event, terrorist activity or natural disaster. This Goodyear facility serves as a strong reminder of why vulnerability assessments of these facilities are required; why workers should be involved in those assessments; why annual drills should take place; and why workers need to be better trained.

The Chemical Safety Board (CSB) is the federal agency which is responsible for investigating incidents like that at the Goodyear facility. In the past, the CSB has issued excellent reports that get to the root cause of an incident and then publish recommendations for preventing future similar events. The CSB did in fact visit the Goodyear facility in Houston recently but did not have the funds to launch a full investigation. In Cincinnati this last weekend, a worker died from what looks like overexposure to hydrogen sulfide that was released when some chemicals reacted in a wastewater treatment facility. CSB had a team at the scene but does not have the funds to fully investigate.

These national tragedies need to be fully investigated, the causes determined, reports written and then the results must be widely distributed. The CSB must have the

resources to do its job. In addition, the Board must be able to research all individual releases, evaluate the generic problems and then offer solutions. There are CSB reports on nitrogen asphyxiation, chlorine release from large containers and combustible dust. If we are serious about protecting our nation's chemical industry infrastructure, the question of the proper and improper use of relief valves should be a subject of a future CSB report.

Reviewing what happened and learning from all accidents including the Goodyear explosion is crucial to protecting chemical workers. Besides accidents that can injure and kill workers, chemical plants can also become the targets for terrorists' attacks. Whether it is from a terrorist attack, accidents, or from natural disasters, the result threatens the safety of workers and surrounding communities. This vulnerability is well documented and has resulted in many important legislative discussions.

Currently, the Department of Homeland Security (DHS) has addressed a National Risk Management Framework to protect our critical infrastructure and key national resources. This DHS Risk Management Framework identifies a number of key steps, one of which is "Implementing Protective Programs." Much of what the current CFATS regulations require in collecting Top Screen information and assigning facilities to tiers remains in place. What will be different is the implementation of these protective programs as well as what should be included in the programs. Crafting well thought out legislation and regulations is no easy task and we appreciate the Subcommittee's efforts to draft legislation that will address the problems. As you know, the current DHS regulations expire in October, 2009. It is important that chemical workers and their management have as much time as possible to plan for any final rule. It is critical that we have the time to address our concerns and hope you will move legislation that will help us resolve these concerns.

In order to improve the safety of chemical plants, it is crucial that we also concentrate on worker involvement in security plans, effective training requirements, strong whistleblower protection, strong OSHA standards and use of methods to reduce the consequences of a catastrophic release.

A key element in enhancing chemical plant security is worker involvement and participation. Chemical workers know first hand how a plant works, what chemicals are used, how those chemicals react to one another and any particular facilities' weaknesses. We know the exact location of hazardous materials and we know if our training is really effective. We also know if backup systems will work when the power goes out. We are responsible for off-loading and loading chemical railway cars and transferring them around the plants. It has long been known that workers have direct and current knowledge and experience of plant operations that is invaluable in solving site specific problems. All these responsibilities make chemical workers the first line of defense and explain why we believe employee involvement in the drafting and implementation of plants chemical security plan is crucial. It is a vital national resource that workers' expertise – the same expertise that operates these plants everyday – be utilized. All plants should take heed of its workers' expertise and concerns -- prior to an explosion occurring. Including chemical workers in this process will enhance facility security and protection.

Proper and sufficient training is also crucial in protecting workers. My union has run training programs and collected data on how much training our members received in the last 12 months in ten specific areas. Since the primary OSHA training mandate, the Hazard Communication Standard, only requires training on initial assignment, the vast majority of workers have had no recent training in Engineering Controls, Air Monitoring, Decontamination, Toxic Effects, Emergency Response Procedures, OSHA Regulations, or Hazard Recognition (the actual percentage ranges from 69 to 89% with no training). About half of these workers did not receive ANY training in ANY of these areas. Although I do not know what kind of training the workers at Goodyear had, I do know that there is really no such thing as too much training. The government and companies must increase the amount and type of training to all workers inside these plants.

Let me add that to conduct effective training you need resources that can be easily understood. It is no coincidence that New Jersey, a state that has taken a strong interest

in the security of their chemical plants, has devoted a considerable amount of time and effort over the last 30 years to write readable and valuable resources on these key issues. I have provided some of those fact sheets to the Chairwoman on substances we believe were involved in the Goodyear explosion including ammonia, 1,3-Butadiene and styrene.

Another key element of improving the safety in plants must include a clear statement and defense of workers' jobs if they face disciplinary procedures for reporting any significant security weaknesses at their facility. Fear is a fact of life at all too many workplaces and jeopardizing one's job by blowing the whistle is a risky thing to do. Defending members' jobs is regrettably all too common a task unions are forced to do. Workers, who bravely come forward to protect themselves, their co-workers, and communities around the plant, should not fear losing their jobs when they speak out. Whistleblower protection is vital in assuring the free exchange of ideas, improves security and ensures that effective measures are actually implemented. Workers must have the ability to come forth and communicate program deficiencies without fear of retribution.

Occupational Safety and Health Act (OSHA) standards are beyond the jurisdiction of this Subcommittee but they serve as a useful model and one that needs to be considered. Many, but by no means all, hazardous chemicals are already part of the standards that have improved our facilities. There are also broad standards that apply to many workplaces that improve the ability to investigate health hazards and make further improvements. We have a relatively easy time getting Material Safety Data Sheets (MSDS) on substances our members are exposed to, thanks to OSHA's Hazard Communication Standard. I worked in a wire and cable factory before this law went into affect and we did NOT know the contents of containers or what the chemicals could do to us. This Communication Standard changed that and is an invaluable tool in health investigations. Recently, I left a message for a company's health and safety representative about our members getting sick working around a new product line. Within two days, I received the MSDS for the substances and an industrial hygiene report on a sampling that was done -- all without ever talking to this staff person.

It is also possible that lists of chemicals and threshold amounts from one standard can dovetail with another. One standard that probably applies at Goodyear is the Process Safety Management Standard (PSM), 29 CFR 1910.119. If companies reach a threshold amount of these substances, this standard mandates investigation of their processes, clear operating procedures, regular inspections, process hazard analysis, procedures for contractors, pre-startup safety reviews, procedures for mechanical integrity, hot work permits, mandatory training, incident investigations, emergency planning, compliance audits and written procedures for any process changes. Ammonia is covered by this standard but from what I can tell, the raw materials, 1,3-Butadiene and styrene are not.

I do not know the PSM procedures in place at this Goodyear facility but nationally there needs to be inspections and investigations at chemical plants to make sure that this law is being followed and enforced. It is all well and good to have general recommendations and laws but far too often facilities only take note when a law is actually enforced. Unfortunately, laws mean little if everyone knows that they will never be enforced. Even in the best of our facilities there is always room for improvement. One facility that comes to my mind is actually trying to implement the right procedures but after careful review, I realized that all the drills were taking place on the first shift. This is probably because that is when the salaried employees work. Yet, this facility has three shifts and operates continuously. At the end of the day, only a fraction of the workers are being drilled for these types of events.

There are many steps and measures that could and should be taken to improve chemical plant safety and security. Substituting less dangerous formulations, different size and better designed containers, or various engineering steps, can minimize the consequences of an accident or attack at a chemical plant. This safer technology can significantly reduce the risk of a catastrophic release of chemicals from intentional attacks or unintentional disasters. Although safer processes may not be feasible in all circumstances, either technologically or economically, safer solvents or formulations should be substituted for more dangerous ones. The quantities can be reduced, stronger

containers can be used, vulnerable sections can be reinforced and maintenance schedules must be reviewed.

It is invaluable to devote time and funds to develop technologies and practices to decrease threats, vulnerabilities, and consequences of any event. I recently toured a facility, located just outside a major urban area, which utilizes a significant amount of chlorine in its operation. In discussing the potential danger with management and the union representatives, they explained that they had analyzed ways to minimize the risk including using smaller containers. They concluded, rightly I think, that given the volume they use, that smaller containers would have to be changed out so frequently that the risk of releases would be that much greater by using the smaller containers. When I suggested that perhaps these large tank cars could be designed better to minimize the consequences of any failure, they agreed that might be a partial solution. Clearly, we must put on our thinking caps and consider every possibility to make these facilities safer.

Although this Subcommittee's mandate is the protection of our facilities from terrorist attack, I applaud the recognition that the measures that you are discussing will protect us not only from a terrorist attack but will also minimize a hazardous release from a natural disaster or so called "accidents." The dangers we face in a chemical release come from a variety of directions, but these changes as outlined in my testimony will mitigate the consequences and risks of a release regardless of the cause of that release.

Homeland Security Presidential Directive # 8 on National Preparedness stated that we must "strengthen the preparedness of the United States to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies by requiring a national domestic all-hazards preparedness goal." Worksite measures and improvements will result in changes that go beyond a possible terrorist attack and will address a wider range of hazards as stated in this Directive. They will minimize the threat of not only attacks, but catastrophic events and releases which are a reality that chemical workers and the public living around plants experience frequently.

The International Chemical Workers Union Council supports the work of this Subcommittee to ensure the safety of our chemical workers, the communities around the facilities and all Americans. We strongly support legislation that has the protections embodied in H.R. 5577. There is no guarantee that any legislation will prevent tragedies like the one at Goodyear, the BP explosion in 2005 where 15 contractors died, the 27 who died at Thiokol in 1971, the hundreds who died in the 1947 Texas City freighter fire and explosions, the Bhopal disaster that killed thousands, or a terrorist attack but the ICWUC believes it is necessary to make these changes in law and regulations. There is much work to be done to reduce risk and protect workers and communities. You have heard today of the real risks and you have the opportunity to take significant steps forward. On behalf of the ICWUC, I urge you to act now to protect America – to protect all workers and their families – by reducing the consequences of any release, be it intentional or unintentional.

The ICWUC looks forward to working with every Member of this Subcommittee and the House of Representatives to address this crucial problem. Again, I thank you for your time and would be pleased to answer any questions that you may have.